USGS
science for a changing world

http://astrogeology.usgs.gov

Titan

Saturn's largest moon

Orbit
Mean Distance from Saturn: 1,221,830 km

Rotational Period (days)
15.945 days

Orbital inclination (degrees)
0.33

Size
Titan is Saturn's largest moon, and the second largest moon in the solar system. It was thought that Titan was the largest moon in the solar system, but recent observations have shown that Titan's atmosphere is so thick that its solid surface is slightly smaller than Ganymede's. Titan is larger in diameter than Mercury and larger and more massive than Pluto.

Diameter: 5150 km
Equatorial radius (Earth = 1): 4.0372e-01

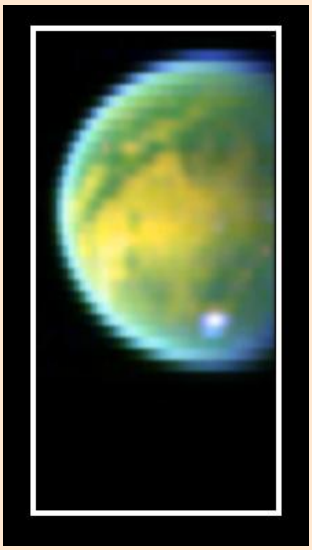
Surface Gravity
0.14 Earth's gravity
If you weigh 80 pounds on Earth, you would only weigh about 11 pounds on Titan!

Mass
1.35e+23 kilograms
Mass (where Earth = 1): 2.2590e-02

Surface Temperature
Mean temperature: -289° Fahrenheit = 94 Kelvins

Atmosphere
The atmospheric pressure near the surface is about 1.6 bars, 60 percent greater than that of Earth. Titan's air is predominantly made up of nitrogen and hydrocarbons which give Titan its orange hue. These hydrocarbon-rich compounds are the building blocks for amino acids, which are believed necessary for the formation of life. Experts think that Titan's atmosphere resembles that of a very young Earth.

Surface
There is little doubt that some active processes are occurring on Titan. Preliminary results from Huygens indicate that while Titan's rivers and lakes appear dry now, rain composed of ethane and methane may have occurred recently. Views of Titan's Saturn-facing hemisphere show dark features and island-like landforms.



PIA06407

NASA, JPL, University of Arizona, USGS

The Titans were a family of giants, the children of Uranus and Gaia, who wanted to rule the heavens but were overthrown by the family of Zeus.

Discovered
Christiaan Huygens discovered Titan in 1655. Huygens first called this body "Luna Saturni," later naming it Titan.

Missions
Voyager 1 (1980) came within 4000 km of Titan's surface.

The Cassini orbiter, in mid 2004, began a series of close encounters with Titan.

On January 14, 2005, Cassini's European-built Huygens probe descended through the atmosphere and landed on Titan, giving images of what appear to be drainage channels and shorelines.